

WHAT IS CLAIMED IS:

1. A method for performing subscriber loop testing in an optical network, comprising:

receiving a request to initiate a loop test;

5 identifying a customer gateway to which test commands are to be sent;

transmitting test commands toward the identified customer gateway to perform a subscriber loop test;

10 performing a channel test on an optical fiber link to the customer gateway;

requesting results of the subscriber loop test;

receiving the results of the subscriber loop test;

15 providing results from the channel test and the subscriber loop test to a test system controller.

2. The method of Claim 1, wherein the request is received through Signaling Network Management Protocol (SNMP) messages.

20 3. The method of Claim 2, further comprising:

converting the request into test commands;

placing the test commands in SNMP messages;

25 transmitting the SNMP messages containing the test commands to the customer gateway over a Local loop Emulation Service Embedded Operations Channel (LES-EOC).

4. The method of Claim 2, wherein the results are provided through SNMP messages.

5. The method of Claim 4, further comprising:
receiving the results of the subscriber loop test
over a Local loop Emulation Service Embedded Operations
Channel (LES-EOC);

5 converting the results of the subscriber loop test
into SNMP messages.

6. The method of Claim 1, wherein test commands are
transmitted to the customer gateway over a Local loop
10 Emulation Service Embedded Operations Channel (LES-EOC)
path.

7. The method of Claim 6, wherein the results of
the subscriber loop test are received over the LES-EOC
15 path.

8. A system for performing subscriber loop testing
in an optical network, comprising:

means for receiving a request to initiate a loop
20 test;

means for identifying a customer gateway to which
test commands are to be sent;

means for transmitting test commands toward the
identified customer gateway to perform a subscriber loop
25 test;

means for performing a channel test on an optical
fiber link to the customer gateway;

means for requesting results of the subscriber loop
test;

30 means for receiving the results of the subscriber
loop test;

means for providing results from the channel test
and the subscriber loop test to a test system controller.

9. The system of Claim 8, wherein the request is received through Signaling Network Management Protocol (SNMP) messages.

5 10. The system of Claim 9, further comprising:
 means for converting the request into test commands;
 means for placing the test commands in SNMP
messages;

 means for transmitting the SNMP messages containing
10 the test commands to the customer gateway over a Local
loop Emulation Service Embedded Operations Channel (LES-
EOC).

 11. The system of Claim 9, wherein the results are
15 provided through SNMP messages.

 12. The system of Claim 11, further comprising:
 receiving the results of the subscriber loop test
over a Local loop Emulation Service Embedded Operations
20 Channel (LES-EOC);

 converting the results of the subscriber loop test
into SNMP messages.

 13. The system of Claim 8, wherein test commands
25 are transmitted to the customer gateway over a Local loop
Emulation Service Embedded Operations Channel (LES-EOC)
path.

 14. The system of Claim 13, wherein the results of
30 the subscriber loop test are received over the LES-EOC
path.

15. A system for performing subscriber loop testing in an optical network, comprising:

a test system controller operable to initiate a subscriber loop test;

5 an element management system operable to receive a test request from the test system controller;

a network gateway operable to supervise the subscriber loop test in conjunction with the element management system;

10 a customer gateway operable to perform the subscriber loop test on derived subscriber lines as controlled by the network gateway, the customer gateway operable to provide results for the subscriber loop test to the network gateway for forwarding to the test system
15 controller through the element management system.

16. The system of Claim 15, wherein the network gateway, the element management system, and the test system controller communicate through Signaling Network
20 Management Protocol (SNMP) messages.

17. The system of Claim 15, wherein the network gateway provides test commands to the customer gateway over a Local loop Emulation Service Embedded Operations
25 Channel (LES-EOC).

18. The system of Claim 15, wherein the network gateway is operable to perform a digital channel test on an optical link between the network gateway and the
30 customer gateway.

19. The system of Claim 18, wherein the network gateway provides results of the channel test and the subscriber loop test to the element management system using Signaling Network Management Protocol (SNMP) messages.

20. the system of Claim 15, wherein the customer gateway includes an integrated metallic test head function.